

Amendments to the Claims

After the heading "CLAIMS" and before the beginning of the claims, please insert the words: -- What is claimed is: --

Please amend the claims as follows:

1. (amended) A voltage-controlled oscillator [(VCO)] oscillating at an oscillator frequency comprising :

[-] an LC-resonant circuit with at least one inductor ; [(L₁)]

[-] a controllable switching means [(S_v)] which is arranged in the LC-resonant circuit in such a way that it periodically has a conducting and a non-conducting state at the oscillator frequency and has a control input [(V_{con})] connected to a variable dc voltage, the control voltage U_{con} [,] ; and

[-] a further inductor [(L₂)] which can be periodically switched in parallel or in series with the inductor [(L₁)] by way of the switching means [(S_v)] actuated at the oscillator frequency.

2. (amended) The [A] voltage-controlled oscillator of claim 1, further comprising: [(VCO) as set forth in claim 1 characterized in that] a further inductor ; [(L₂) can be] periodically connected in parallel or in series with a plurality of inductors [(L₁)] by way of a respective controllable switching means [(S_v)] at the oscillator frequency and the controllable switching means is [(S_v) are] controllable by a variable control voltage U_{con}.

3. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in claim 1 characterized in that] the relationship of the duration of the conducting state and the duration of the non-conducting state of the switching means [(S_v)] within an oscillation period of the oscillator varies, depending [(VCO) is variable in dependence] on the control voltage U_{con}.

4. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the time-averaged effective inductance varies, depending [is variable in dependence] on the control voltage U_{con} according to [in accordance with] the relationship of the duration of the conducting state and

the duration of the non-conducting state of the switching means [(S_v)] within an oscillation period of the oscillator [(VCO)].

5. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the controllable switching means comprises [(S_v) are] switching transistors [, in particular MOSFETs].

6. (amended) The [A] voltage-controlled oscillator of claim 17, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that gate terminals (G) of] the MOSFETs have gate terminals that are connected to the control input [(V_{con})] of the control voltage U_{con}.

7. (amended) The [A] voltage-controlled oscillator of claim 6, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that source terminals (S) of] the MOSFETs have source terminals that are connected to parts of the circuit arrangement carrying the oscillator frequency.

8. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the oscillator [(VCO)] is of a CMOS or bipolar technology.

9. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the oscillator [(VCO)] is used in frequency synthesizers for wide-band systems and for multi-band uses and for clock production and clock recovery in high-speed circuits such as for example microprocessors and memories.

10. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that in addition to the voltage-controlled inductance] a voltage-controlled capacitance is integrated in the oscillator [(VCO)], which is connected to a tuning voltage U_{tune} by way of a further control input, the tuning input [(V_{tune})].

11. (amended) The [A] voltage-controlled oscillator of claim 10, wherein: [(VCO) as set forth in claim 10 characterized in that] the voltage-controlled capacitance is embodied by means of at least one variable capacitor diode, [in particular by means of two p-MOSFETs (M_1 , M_2)], wherein the effective capacitance depends on the tuning voltage U_{tune} at the tuning input [(V_{tune})].

12. (amended) The [A] voltage-controlled oscillator of claim 10, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the tuning input [(V_{tune})] of the oscillator [(VCO)] is connected to an output of a phase-locked loop [(PLL)] and the output of the voltage-controlled oscillator [(VCO)] is connected to an input of the phase-locked loop [(PLL)].

13. (amended) The [A] voltage-controlled oscillator of claim 1, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the noise of the control voltage at the control input [(V_{con})] is blocked out by means of a high capacitance between the control input [(V_{con})] and ground.

14. (amended) The [A] voltage-controlled oscillator of claim 10, wherein: [(VCO) as set forth in one or more of the preceding claims characterized in that] the tuning input [(V_{tune})] of the voltage-controlled oscillator [(VCO)] is connected to the output of a [the] phase-locked loop [(PLL; PLL1)] and the control input [(V_{con})] of the voltage-controlled oscillator [(VCO)] is connected to an output of a further phase-locked loop [(PLL2)].

Please add the following new claims:

15. (new) The voltage-controlled oscillator of claim 2, wherein:
the time-averaged effective inductance varies, depending on the control voltage U_{con} according to the relationship of the duration of the conducting state and the duration of the non-conducting state of the switching means within an oscillation period of the oscillator.

16. (new) The voltage-controlled oscillator of claim 3, wherein:
the time-averaged effective inductance varies, depending on the control voltage U_{con} according to the relationship of the duration of the conducting state and the duration of the non-conducting state of the switching means within an oscillation period of the oscillator.

17. (new) The voltage-controlled oscillator of claim 5, wherein:
the switching transistors are MOSFETs.
18. (new) The voltage-controlled oscillator of claim 2, wherein:
the controllable switching means comprises switching transistors.
19. (new) The voltage-controlled oscillator of claim 18, wherein:
the switching transistors are MOSFETs.
20. (new) The voltage-controlled oscillator of claim 3, wherein:
the controllable switching means comprises switching transistors.
21. (new) The voltage-controlled oscillator of claim 20, wherein:
the switching transistors are MOSFETs.
22. (new) The voltage-controlled oscillator of claim 4, wherein:
the controllable switching means comprises switching transistors.
23. (new) The voltage-controlled oscillator of claim 22, wherein:
the switching transistors are MOSFETs.
24. (new) The voltage-controlled oscillator of claim 19, wherein:
the MOSFETs have gate terminals that are connected to the control input of the
control voltage U_{con} .
25. (new) The voltage-controlled oscillator of claim 21, wherein:
the MOSFETs have gate terminals that are connected to the control input of the
control voltage U_{con} .
26. (new) The voltage-controlled oscillator of claim 23, wherein:
the MOSFETs have gate terminals that are connected to the control input of the
control voltage U_{con} .

27. (new) The voltage-controlled oscillator of claim 24, wherein:
the MOSFETs have source terminals that are connected to parts of the circuit arrangement carrying the oscillator frequency.
28. (new) The voltage-controlled oscillator of claim 25, wherein:
the MOSFETs have source terminals that are connected to parts of the circuit arrangement carrying the oscillator frequency.
29. (new) The voltage-controlled oscillator of claim 26, wherein:
the MOSFETs have source terminals that are connected to parts of the circuit arrangement carrying the oscillator frequency.
30. (new) The voltage-controlled oscillator of claim 27, wherein:
the oscillator is of a CMOS or bipolar technology.
31. (new) The voltage-controlled oscillator of claim 28, wherein:
the oscillator is of a CMOS or bipolar technology.
32. (new) The voltage-controlled oscillator of claim 29, wherein:
the oscillator is of a CMOS or bipolar technology.
33. (new) The voltage-controlled oscillator of claim 10, wherein:
the voltage-controlled capacitance is embodied by means of at least one variable capacitor diode, wherein the effective capacitance depends on the tuning voltage U_{tune} at the tuning input.
34. (new) The voltage-controlled oscillator of claim 33, wherein:
the tuning input of the oscillator is connected to an output of a phase-locked loop and the output of the voltage-controlled oscillator is connected to an input of the phase-locked loop.